ThinkServer RD430 Photography - Eight 3.5" disk bays

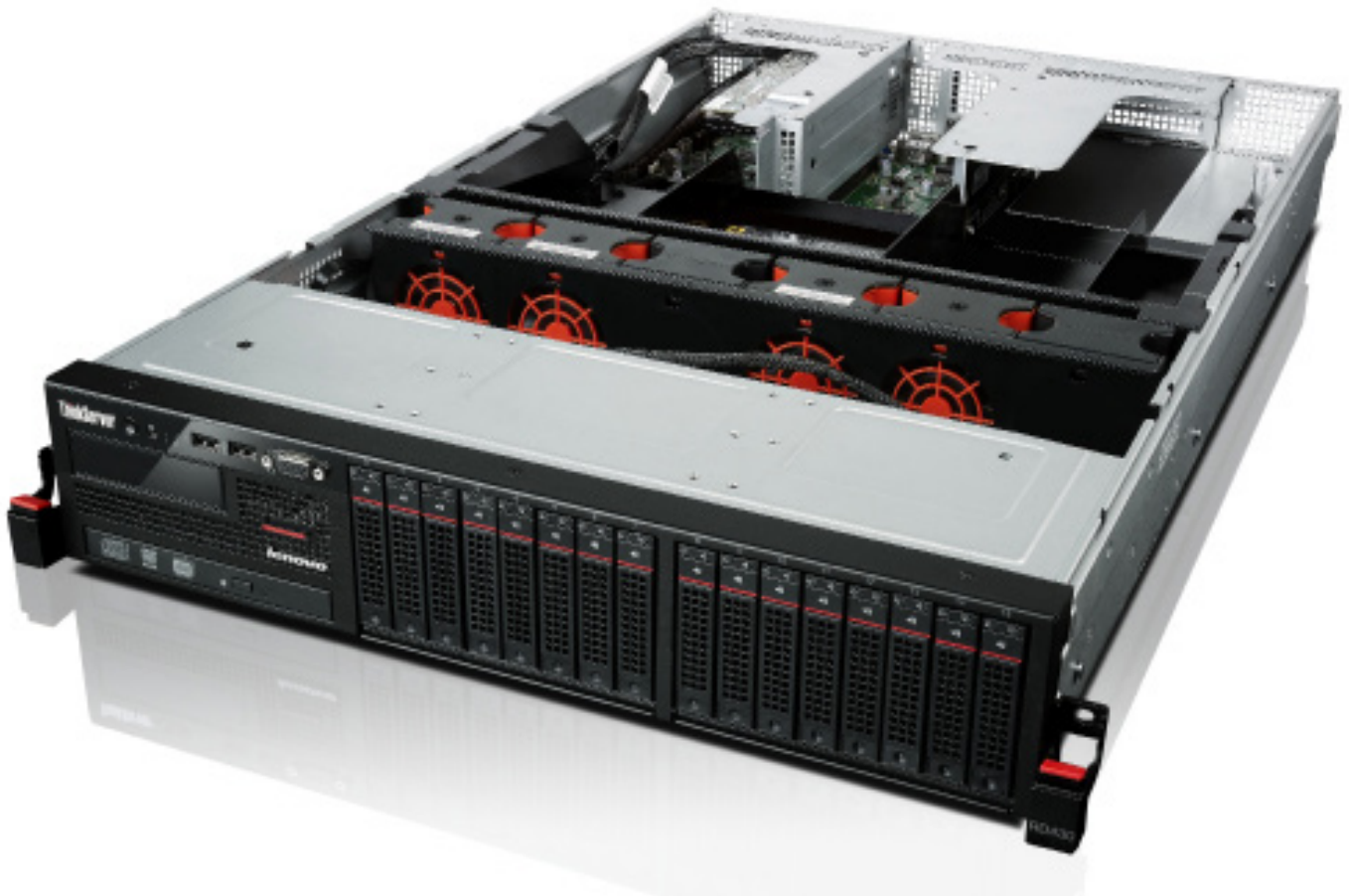**ThinkServer**™

ThinkServer RD430 Photography - 2.5" disk bays

ThinkServer.

* Some models in pictures above contain optional add-in ethernet adapter or RAID adapter; some RD430 with 2.5" disk bay models may come with 8 disk bays

ThinkServer RD430 with eight 3.5" Disk Bays (3064) - TopSeller

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3064-G2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G3U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G4U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3064-G5U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3064-G6U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic*: IDM LED lights indicate failing component category *Premium*: IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Disk Bay 2-9

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays
Bay 1   5.25",   0.5" high, external,   for optical
Bay 2-9   3.5",   1" high,   external,   for disk

Expansion Slots
Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with eight 3.5" Disk Bays (3065)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-B1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3065-B2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3065-B3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B4U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B5U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

			2U Rack top
Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet		
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)		
Implementation	Two LGA1356 sockets		

Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays	Eight 3.5" hot-swap SATA/SAS disk bays (see right)
Disk controller	*RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express□ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive	None
Optical	DVD±RW or DVD ROM, slim
Diskette	None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5
Front ports	One analog VGA DB-15 connector, two USB 2.0
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic*: IDM LED lights indicate failing component category *Premium*: IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites	SATA/SAS disk, OS
Keyboard/mouse	None (use USB port)
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit	Includes rack kit
Cable management	Optional cable management arm on selected models
Cooling	Four fans, hot-swap

Front

Disk Bay 2-9

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays
Bay 1   5.25", 0.5" high, external, for optical
Bay 2-9   3.5", 1" high, external, for disk

Expansion Slots
Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager

ENERGY STAR□ Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with eight 3.5" Disk Bays (3065) - September 2012

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-A3U	1xE5-2420	1600MHz RDIMM	1x8GB	No	300		SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
3065-A4U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-A5U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI™ SAS 9240-8i), PCI Express™ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic*: IDM LED lights indicate failing component category *Premium*: IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays
Bay 1	5.25",	0.5" high,	external,	for optical
Bay 2-9	3.5",	1" high,	external,	for disk

Expansion Slots
Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager

ENERGY STAR™ Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3065-K1U	1xE5-2450	1600MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1

Limited warranty	**3-year** parts and labor; more services information see S-RD sheet	
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	**2U Rack top**
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	**Front**
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700	Disk Bay 2-9 **Rear**
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	*Slot 4, 5 are available on dual processors models only*
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	**Intel C606 Chipset**	
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	**Mechanical** ● 2U rack ● 19"W x 28.9"D x 3.45"H (with rack handles) ● 482.4mm W x 734mm D x 87.6mm H (with rack handles) ● 26.5 kg (58.42 lb) when fully configured
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic*: IDM LED lights indicate failing component category *Premium*: IDM Premium LED lights indicate individual failing part	**Disk Bays** Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk
Systems mgmt Security chip	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant	**Expansion Slots** Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) *Slot 4-5 are available on dual processors models:* Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	**Security** ● Security chip (selected models, see information on left) ● Administrator password ● User password ● Boot sequence control
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	● Boot without keyboard, mouse, diskette ● Serial port I/O control ● USB port disablement (all)

Software Management Tools
● ThinkServer EasyStartup
● ThinkServer EasyManage

Energy Management Technology
● Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with twelve 3.5" Disk Bays (3057) - TopSeller

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3057-E1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3057-E5U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery		12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3057-E6U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery	6x1TB 3.5" SATA	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

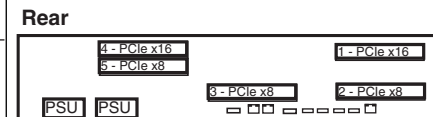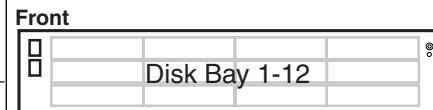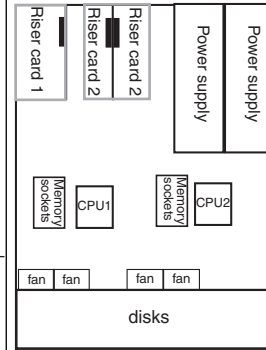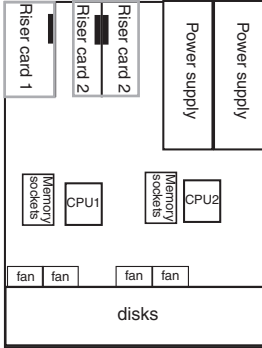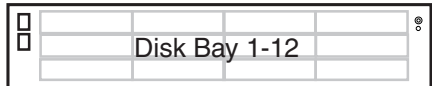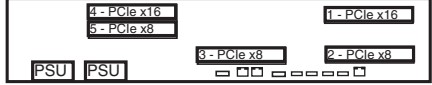|		
Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet	**2U Rack top**
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*	**Front**
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Disk Bay 1-12
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express□ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700	**Rear**
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	*Slot 4, 5 are available on dual processors models only*
Disk(s)	*3.5" SATA:* SATA 6.0Gb/s, 7200 rpm *3.5" SAS:* SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None None (use USB port) None (use USB port)	
Chipset	**Intel C606 Chipset**	**Mechanical**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	● 2U rack ● 19"W x 28.9"D x 3.45"H (with rack handles) ● 482.4mm W x 734mm D x 87.6mm H (with rack handles) ● 26.5 kg (58.42 lb) when fully configured
Intelligent Diagnostics Module (IDM)	None	**Disk Bays** Bay 1-12 3.5", 1" high, external, for disk
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions	**Expansion Slots** Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) *Slot 4-5 are available on dual processors models:* Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant	**Security**
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	● Security chip (selected models, see information on left) ● Administrator password ● User password ● Boot sequence control ● Boot without keyboard, mouse, diskette ● Serial port I/O control ● USB port disablement (all)
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	**Software Management Tools** ● ThinkServer EasyStartup ● ThinkServer EasyManage
		Energy Management Technology ● Lenovo® SmartGrid Manager
		ENERGY STAR□ Server 1.1-compliant RoHS-compliant
		For more accessories, see O-RAL sheet

ThinkServer RD430 with twelve 3.5" Disk Bays (3059)

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-F1U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3059-F2U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade	None	12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3059-F3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3059-F4U	2xE5-2450	1333MHz RDIMM	2x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more warranty information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 500*: ThinkServer RAID 500 adapter (LSI™ SAS 9240-8i), PCI Express™ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA:* SATA 6.0Gb/s, 7200 rpm *3.5" SAS:* SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None None (use USB port) None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	None
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Disk Bay 1-12

Rear

4 - PCIe x16		1 - PCIe x16
5 - PCIe x8		
	3 - PCIe x8	2 - PCIe x8
PSU PSU		

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR™ Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with twelve 3.5" Disk Bays (3059) - Sep 2012
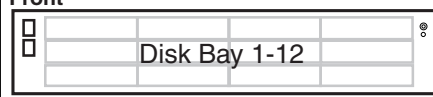
Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-F6U	1xE5-2420	1600MHz RDIMM	1x8GB	No	700		SATA/SAS	No	No	TPM	iKVM	No	No	1
3059-F8U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	SATA/SAS	No	No	TPM	iKVM	No	No	2
3059-F9U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more warranty information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays	Twelve 3.5" hot-swap SATA/SAS disk bays (see right)
Disk controller	*RAID 500*: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express™ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA*: SATA 6.0Gb/s, 7200 rpm *3.5" SAS*: SAS 6.0Gb/s, 15000 rpm
Tape drive	None
Optical	None (use USB port)
Diskette	None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5
Front ports	Two USB 2.0
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	None
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM*: add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM*: additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites	SATA/SAS disk, OS
Keyboard/mouse	None (use USB port)
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit	Includes rack kit
Cable management	Optional cable management arm on selected models
Cooling	Four fans, hot-swap

2U Rack top

Front

Disk Bay 1-12
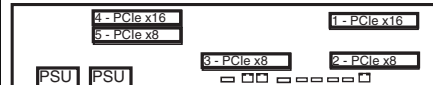
Rear

Slot 4, 5 are available on dual processors models only

Mechanical

• 2U rack
• 19"W x 28.9"D x 3.45"H (with rack handles)
• 482.4mm W x 734mm D x 87.6mm H (with rack handles)
• 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

• Security chip (selected models, see information on left)
• Administrator password
• User password
• Boot sequence control
• Boot without keyboard, mouse, diskette
• Serial port I/O control
• USB port disablement (all)

Software Management Tools

• ThinkServer EasyStartup
• ThinkServer EasyManage

Energy Management Technology

• Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	System mgmt	Cable mgmt	Preload OS	PSU qty
3059-K5U	1xE5-2450	1600MHz RDIMM	1x8GB	No	700	No	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	1

Limited warranty	**3-year** parts and labor; more warranty information see S-RD sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) *RAID 500*: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*3.5" SATA:* SATA 6.0Gb/s, 7200 rpm *3.5" SAS:* SAS 6.0Gb/s, 15000 rpm
Tape drive Optical Diskette	None None (use USB port) None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	None
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Disk Bay 1-12

Rear

Slot 4, 5 are available on dual processors models only

Mechanical
- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays
Bay 1-12 3.5", 1" high, external, for disk

Expansion Slots
Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security
- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools
- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology
- Lenovo® SmartGrid Manager

ENERGY STAR® Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with 2.5" Disk Bay (3070) - TopSeller

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	Sys mgmt	Cable mgmt	Preload OS	PSU qty
3070-C1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300		8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3070-C2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300		8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3070-C3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3070-C4U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3070-C5U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
3070-C6U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery		16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3070-C7U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery	6x300GB 2.5" SAS	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3070-C8U	1xE5-2450	1333MHz RDIMM	1x8GB	No	300		8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3070-C9U	1xE5-2450	1333MHz RDIMM	1x8GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express□ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*2.5" SAS:* SAS 6.0Gb/s, 10000 rpm *SSD:* Solid State Drive, 2.5"
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic:* IDM LED lights indicate failing component category *Premium:* IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Bay 10-17 are available on sixteen disk bays models only

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay	1	5.25",	0.5" high,	external,	for optical
Bay	2-9	2.5",	0.6" high,	external,	for disk

Bay 10-17 are available on sixteen 2.5" disk bays model:

Bay	10-17	2.5",	0.6" high,	external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR□ Server 1.1-compliant
RoHS-compliant

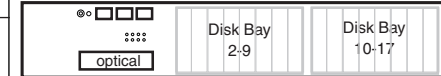For more accessories, see O-RAL sheet

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	Sys mgmt	Cable mgmt	Preload OS	PSU qty
3071-D1U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3071-D2U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	None	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3071-D3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	None	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet	
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)	
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express□ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	*2.5" SAS:* SAS 6.0Gb/s, 10000 rpm *SSD:* Solid State Drive, 2.5"	
Tape drive	None	
Optical	DVD±RW or DVD ROM, slim	
Diskette	None (use USB port)	
Chipset	**Intel C606 Chipset**	
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5	
Front ports	One analog VGA DB-15 connector, two USB 2.0	
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic:* IDM LED lights indicate failing component category *Premium:* IDM Premium LED lights indicate individual failing part	
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions	
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	SATA/SAS disk, OS	
Keyboard/mouse	None (use USB port)	
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	
Rack kit	Includes rack kit	
Cable management	Optional cable management arm on selected models	
Cooling	Four fans, hot-swap	

2U Rack top

Front

Bay 10-17 are available on sixteen disk bays models only

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1 5.25", 0.5" high, external, for optical
Bay 2-9 2.5", 0.6" high, external, for disk
Bay 10-17 are available on sixteen 2.5" disk bays model:
Bay 10-17 2.5", 0.6" high, external, for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

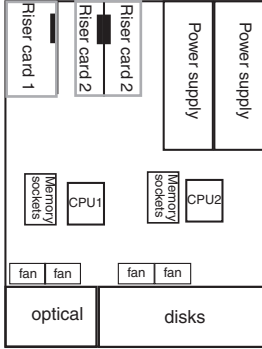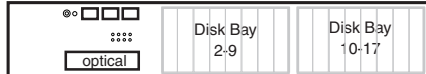### Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR□ Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with 2.5" Disk Bay (3071) - September 2012

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	Sys mgmt	Cable mgmt	Preload OS	PSU qty
3071-D4U	1xE5-2420	1600MHz RDIMM	1x8GB	No	300		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
3071-D6U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3071-D7U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	**3-year** parts and labor; more services information see S-RAL sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1)**, 3-channel DDR3 memory controller (up to 1066MHz) **Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	• *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* • *Over six DIMMs requires dual processors* • *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI™ SAS 9240-8i), PCI Express™ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*2.5" SAS:* SAS 6.0Gb/s, 10000 rpm *SSD:* Solid State Drive, 2.5"
Tape drive	None
Optical	DVD±RW or DVD ROM, slim
Diskette	None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5
Front ports	One analog VGA DB-15 connector, two USB 2.0
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic:* IDM LED lights indicate failing component category *Premium:* IDM Premium LED lights indicate individual failing part
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *iKVM:* add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites	SATA/SAS disk, OS
Keyboard/mouse	None (use USB port)
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit	Includes rack kit
Cable management	Optional cable management arm on selected models
Cooling	Four fans, hot-swap

2U Rack top

Front

Bay 10-17 are available on sixteen disk bays models only

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay		Size	Height	Type	
Bay 1	5.25",	0.5" high,	external,	for optical
Bay 2-9	2.5",	0.6" high,	external,	for disk

Bay 10-17 are available on sixteen 2.5" disk bays model:

| Bay 10-17 | 2.5", | 0.6" high, | external, | for disk |

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

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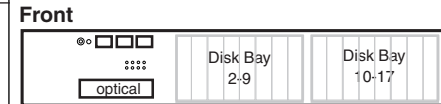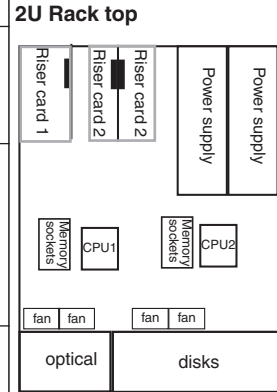RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer RD430 with 2.5" Disk Bay (3071) - October 2012

Type-model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	TPM	Sys mgmt	Cable mgmt	Preload OS	PSU qty
3071-K4U	1xE5-2450	1600MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1

Limited warranty	**3-year** parts and labor; more services information see S-RD sheet
Processor	Up to two Intel® Xeon® E5-2400 series processors, **Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)**, Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)
Implementation	Two LGA1356 sockets
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs* ● *Over six DIMMs requires dual processors* ● *Mixing of UDIMM, RDIMM, or LV RDIMM is not supported*
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) *RAID 300*: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support *Upgrade for 300*: Additional upgrade key for RAID 300, add RAID 5 support *RAID 500*: ThinkServer RAID 500 adapter (LSI□ SAS 9240-8i), PCI Express□ bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support *Upgrade for 500*: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support *RAID 700*: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support *Battery for 700*: Intelligent Battery Backup Unit (iBBU08) for RAID 700
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter
Disk(s)	*2.5" SAS:* SAS 6.0Gb/s, 10000 rpm *SSD:* Solid State Drive, 2.5"
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)
Chipset	**Intel C606 Chipset**
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; *Basic:* IDM LED lights indicate failing component category *Premium:* IDM Premium LED lights indicate individual failing part
Systems mgmt *iKVM:*	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); add-on ThinkServer Management Module Premium for iKVM functions
Security chip	No onboard TPM chip; *TPM:* additional add-on card for TPM function, TCG 1.2-compliant
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap

2U Rack top

Front

Bay 10-17 are available on sixteen disk bays models only

Rear

Slot 4, 5 are available on dual processors models only

Mechanical

- 2U rack
- 19"W x 28.9"D x 3.45"H (with rack handles)
- 482.4mm W x 734mm D x 87.6mm H (with rack handles)
- 26.5 kg (58.42 lb) when fully configured

Disk Bays

Bay 1	5.25",	0.5" high,	external,	for optical
Bay 2-9	2.5",	0.6" high,	external,	for disk

Bay 10-17 are available on sixteen 2.5" disk bays model:

Bay 10-17	2.5",	0.6" high,	external,	for disk

Expansion Slots

Slot 1: half-length, full-height, PCI Express 3.0 x16
Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Slot 4-5 are available on dual processors models:
Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Slot 5: half-length, full-height, PCI Express 3.0 x8

Security

- Security chip (selected models, see information on left)
- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

Software Management Tools

- ThinkServer EasyStartup
- ThinkServer EasyManage

Energy Management Technology

- Lenovo® SmartGrid Manager

ENERGY STAR□ Server 1.1-compliant
RoHS-compliant

For more accessories, see O-RAL sheet